MATHS MASTERY INFORMATION FOR PARENTS'

Much Marcle C of E Primary School

THE ESSENCE OF MATHS TEACHING FOR MASTERY

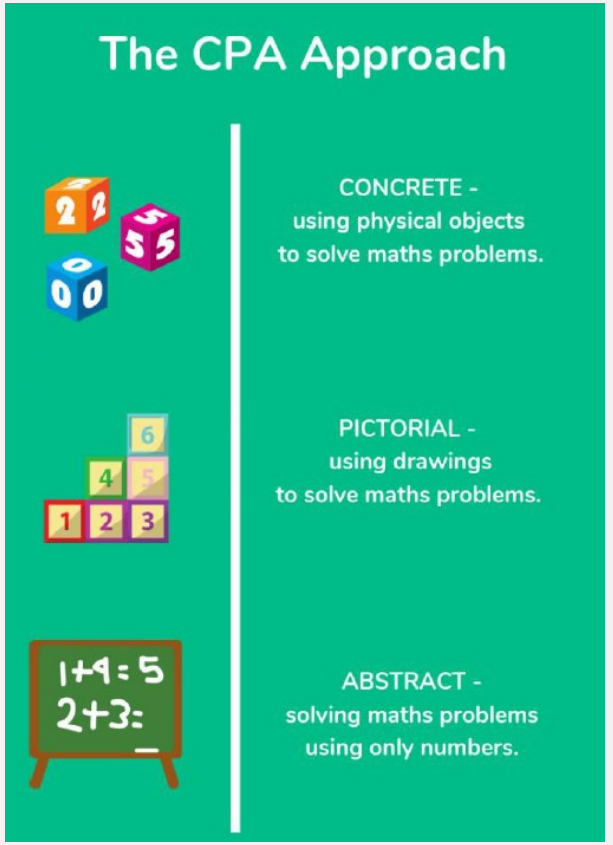
•Maths teaching for mastery rejects the idea that a large proportion of people just 'can't do maths'.

•All pupils are encouraged by the belief that by working hard at maths they can succeed.

•Pupils are taught through whole-class interactive teaching, where the focus is on **all** pupils working together on the same lesson content at the same time. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.

CONCRETE –PICTORIAL –ABSTRACT APPROACH

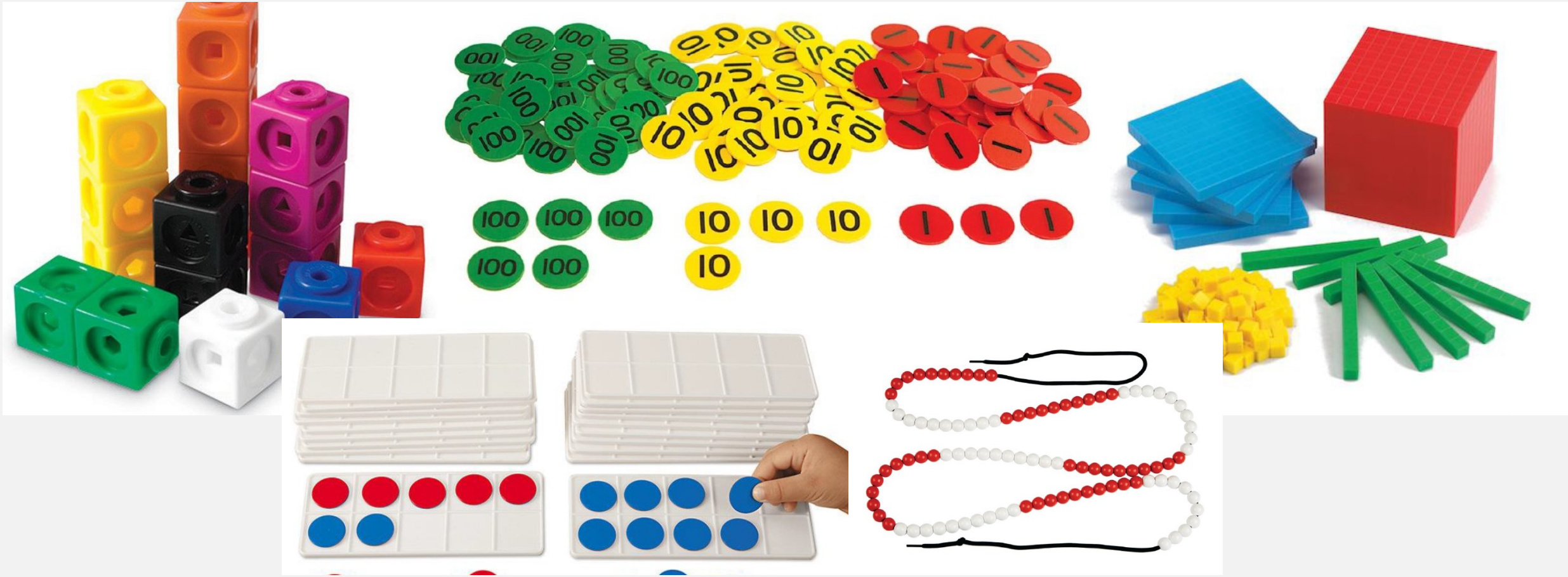
- Concrete, Pictorial, Abstract (CPA) is a highly effective approach to teaching that develops a deep and sustainable understanding of maths in pupils
- This approach is used from Reception through to Year 6
- Children in Year 6 are still encouraged to use concrete objects in lessons



CPA –CONCRETE STEP

- Concrete is the 'doing stage'. During this stage, children use concrete objects to model problems.
- Unlike traditional maths teaching methods where teachers demonstrate how to solve a problem, the CPA approach brings concepts to life by allowing children to experience and handle physical (concrete) objects.
- With the CPA framework, every abstract concept is first introduced using physical, interactive concrete materials (Maths No Problem, 2019).
- For example, if a problem involves adding paintbrushes, children can first handle paintbrushes. From there, they can progress to handling abstract counters or cubes which represent the paintbrushes.

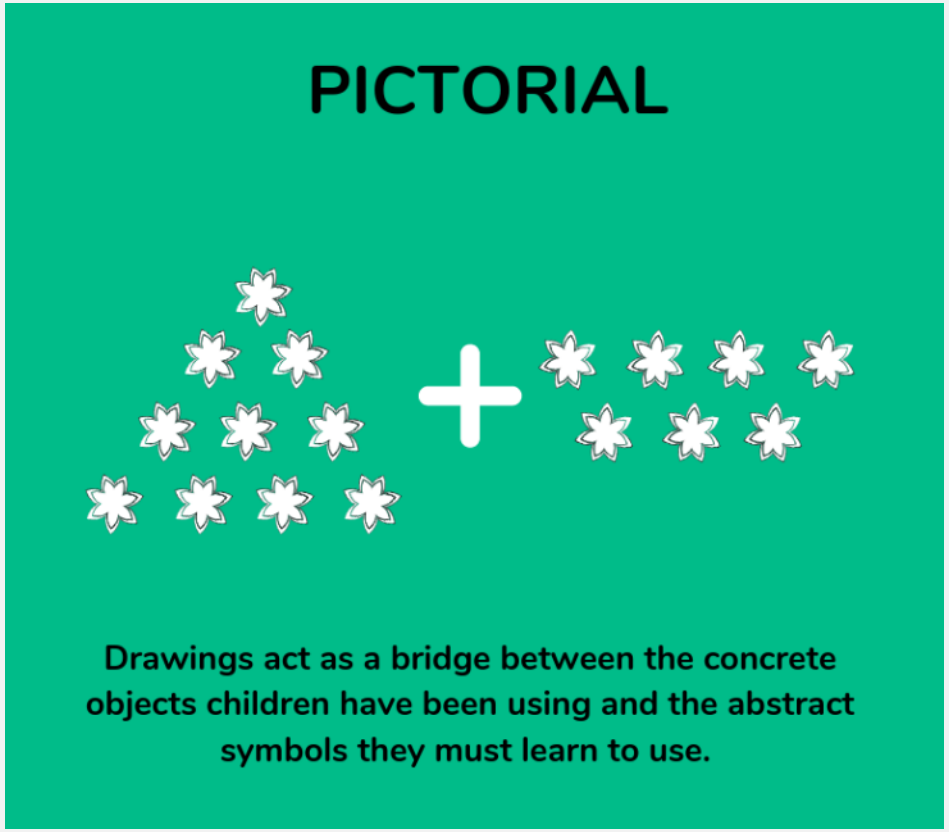
SOME OF THE CONCRETE RESOURCES THAT WE USE IN SCHOOL



HOWEVER, REALLY THERE IS NO END TO THE CONCRETE RESOURCES WE/YOU CAN USE

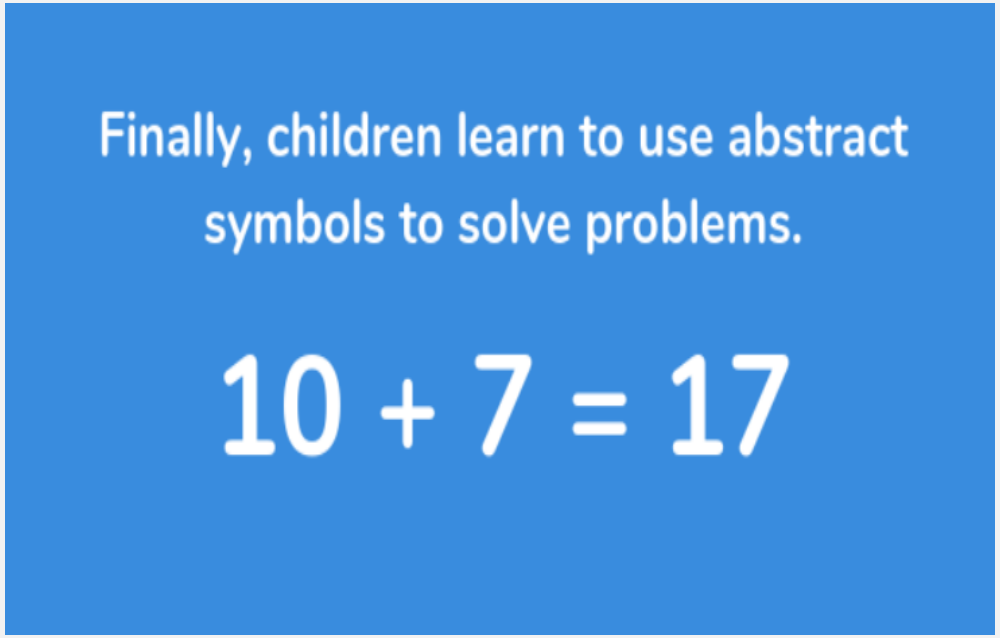
CPA –PICTORIAL STEP

- Pictorial is the 'seeing' stage. Here, visual representations of concrete objects are used to model problems. This stage encourages children to make a mental connection between the physical object they just handled and the abstract pictures, diagrams or models that represent the objects from the problem.
- Building or drawing a model makes it easier for children to grasp difficult abstract concepts (e.g. fractions). Simply put, it helps the children visualise abstract problems and makes them more accessible (Maths No Problem, 2019).



CPA –ABSTRACT STEP

- Abstract is the 'symbolic' stage, where children use abstract symbols to model problems. They will not progress to this stage until they have demonstrated that they have a solid understanding of the concrete and pictorial stages of the problem.



- White Rose is a scheme of work (SOW) for teaching maths.

- There are other SOWs currently available to schools, however, we decided that White Rose was the best fit for our school.

EVERYONE CAN!

We believe that **all** children are capable of understanding maths and are neither 'born with the maths gene' or are 'just not good at maths.' They **all** have the potential to 'go deeper' and broaden their understanding of mathematical concepts.

Click on the link below for a short video that gives a nice introduction to our philosophy about teaching and learning maths.

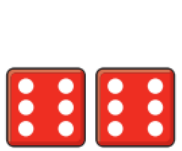
https://www.youtube.com/watch?v=ZonomJumRoM

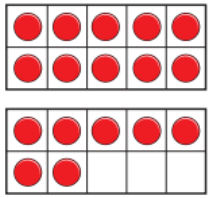
WHITE ROSE

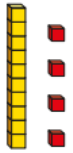
- Builds every concept in small, progressive steps.
- Is built with interactive, whole-class teaching in mind.
- Provides the tools we need to develop growth mindsets.
- Helps us check understanding and ensure that every child is keeping up.
- Establishes core elements such as intelligent practice and reflection.

YEAR 1 EXAMPLE

1 Match the pictures to the numerals.







12	14	17

2 Complete the number tracks.

10	11	12							

			12	13					

18	17								

YEAR 2 EXAMPLE

Numbers to 20

1 Complete the number tracks.

0	1	2						

12	13	14						

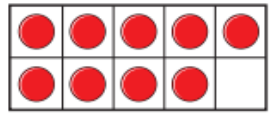
	10	11			14	

			14	15			18		

five	six			

2 What numbers are shown?

a)



numeral ☐

word _____

b)

numeral ☐

word _____

c)

numeral ☐

word _____

d)

numerals ☐

word _____

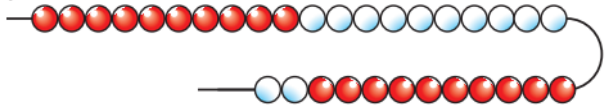
YEAR 3 EXAMPLE

Represent numbers to 100

White Rose Maths

1 Complete the sentences to describe each number.

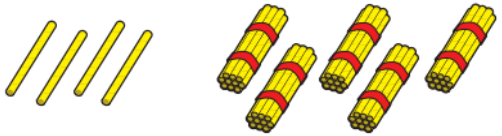
a)



There are ☐ tens and ☐ ones.

The number is ☐

b)



There are ☐ tens and ☐ ones.

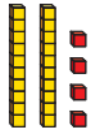
The number is ☐

c)

There are ☐ tens and ☐ ones.

2 Complete the sentences.

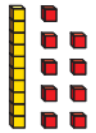
a)



There are ☐ tens and ☐ ones.

The number is ☐

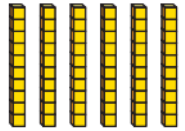
b)



There is ☐ ten and ☐ ones.

The number is ☐

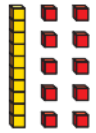
c)



There are ☐ tens and ☐ ones.

The number is ☐

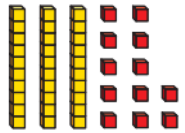
d)



There are ☐ tens and ☐ ones.

The number is ☐

e)



There are ☐ tens and ☐ ones.

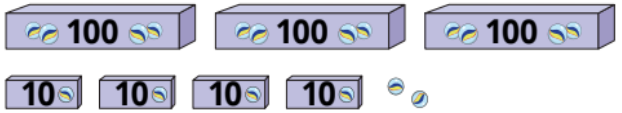
The number is ☐

YEAR 4 EXAMPLE

Represent numbers to 1,000

White Rose Maths

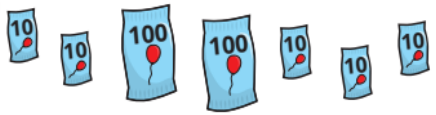
1 How many marbles are there?



2 How many balloons are there?

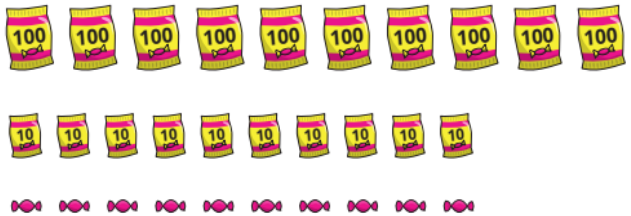
a)

b)



c)

3 Here are some sweets.



a) Ben takes 458 sweets.

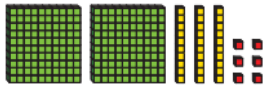
Circle the sweets Ben could have taken.

b) Kim takes the rest of the sweets.

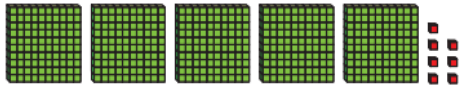
How many sweets does Kim take?

4 What numbers are represented?

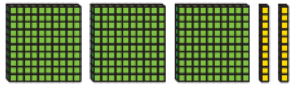
a)



b)



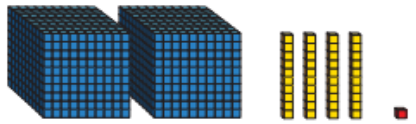
c)

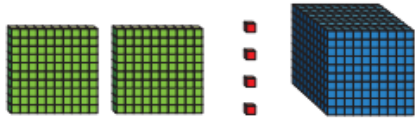


YEAR 5 EXAMPLE

Numbers to 10,000

1 What numbers are represented?

a) 

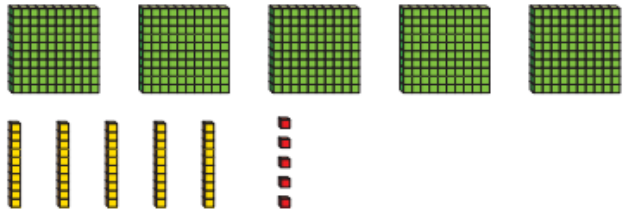
b) 

c)

TTh	Th	H	T	O
	1,000 1,000 1,000 1,000		10	1 1

d) 

2 a) Circle 412



b) Draw counters in the place value chart to represent 5,321

Th	H	T	O

3 Complete the calculations.

a) 2,865 + 1 = ☐

2,865 + 10 = ☐

2,865 + 100 = ☐

2,865 + 1,000 = ☐

b) 1,256 – 1 = ☐

1,256 – 10 = ☐

1,256 – 100 = ☐

1,256 – 1,000 = ☐

YEAR 6 EXAMPLE

Numbers to 1,000,000

1 What numbers are represented in each place value chart?

a)

HTh	TTh	Th	H	T	O
●●	●●	●●	●	●●	●●
●●	●	●●		●●	
●●		●			
●					

b)

HTh	TTh	Th	H	T	O
	●●	●●		●●	
	●●	●●		●	
	●				

c)

HTh	TTh	Th	H	T	O
●●		●●	●●		●●
		●●	●●		●●
		●	●		●●
					●

d)

HTh	TTh	Th	H	T	O
●●	●	●●		●●	
●		●			

2 What numbers are represented in the place value charts?

a)

Thousands			Ones		
H	T	O	H	T	O
●●	●●	●●	●●	●	●●
	●	●●	●●		●●
			●●		
			●		

b)

Thousands			Ones		
H	T	O	H	T	O
	●●	●●		●	●●
	●●				●●
	●●				●●

c)

Thousands			Ones		
H	T	O	H	T	O
●●		●●	●●	●●	
●		●●		●●	
		●		●	

d)

Thousands			Ones		
H	T	O	H	T	O
●●					●●
●●					
●					

MATHS LESSONS AT MUCH MARCLE

Each Maths lesson at Much Marcle will consist of:

- 15 minutes of R.A.M (raising attainment in Maths) focusing on fluency and basic fundamental mathematical skills
- Teacher input involving new learning
- Independent, partner or group work activities

HOW CAN YOU HELP YOUR CHILD

- Please refer to our Parent leaflets on our Curriculum page. These year group booklets explain the expectations in maths and provide tips on how to support your child at home.

- In KS2 children should complete their online daily times tables on Purple Mash.